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OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. LXXX. APRIL 9, 1920. No. 6

Sir F. W. DYSON, F.R.S., VICE-PRESIDENT, in the Chair.

Leonard Berger Benny, M.A., Mathematical Department, University College, Exeter;
Violet Mary Common, 62 Ranelagh Road, Ealing, W. 5;
J. P. Henderson, M.A., Dominion Observatory, Ottawa, Canada;
Donald William Horner, F.R.Met.Soc., Glendale, Tower Park, Moretonhampstead, Devon;
Harold Lee Parker Jolly, M.A., Ordnance Survey Office, Southampton;
Elizabeth Isis Kent (*née* Pogson), "Velindre," 213 Holdenhurst Road, Bournemouth;
William Reginald Kirkwood, Stoke House, Seaford, Sussex;
Henry Lowery, B.Sc. (Lond.), F.R.Met.Soc., 18 Montreal Street, Cleator Moor, Cumberland; and
J. Horace Reeves, M.A., M.B.E. (Military), 6 Penywern Road, Earl's Court, S.W.,

were balloted for and duly elected Fellows of the Society.

The following candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended:—

Captain George Frederick Dickens, D.S.C., Lieut. R.N.R., 24 Southside, Weston-super-Mare (proposed by E. Fawcett White);
Walter Gornold, 3 Medina Villas, Hove, Sussex (proposed by Edmund J. Spitta);
R. Leetham Jones, M.A. (Cantab.), 11 Eardley Crescent, Earl's Court, London, S.W. 5 (proposed by Fred. J. W. Crowe);

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Gerald Merton, M.A. (Cantab.), M.C., Slopes, Woldingham, Surrey (proposed by W. G. de W. Mitchell);

J. de Mendizábal Tamborrel, Ingénieur Géographe, Sociedad Alzate, Mexico D.F., Mexico (proposed by E. B. Knobel); and

Prof. J. Proudman, Tidal Institute, The University, Liverpool (proposed by Sir F. W. Dyson).

Sixty-two presents were announced as having been received since the last Meeting, including, amongst others:—

Four nine-inch mirrors formerly belonging to the late William Lassell, and a box of his MS. books of Observations, presented by A. Lassell, Esq.

The Chairman also announced that Mrs. H. J. Watson had presented to the Society the sum of £300 in memory of her late husband, Col. H. J. Watson, and that it had been arranged that the interest should be used in the purchase of books for the Library.

On the Suspended Zenith Telescope of Durham Observatory.
Part I. By E. H. Hills, F.R.S. (Plate 6.)

I. History of the Instrument.

In the course of a series of observations with the Durham almucantar in 1912 (v. *M.N.*, 73, 369) it was clearly brought out that the precision obtained with a floating instrument of that type, used away from the zenith, was not likely to approach that of other instruments designed for the same class of work. At the same time the results obtained at Greenwich with the Cookson zenith telescope seemed to indicate that with a floating instrument, used near the zenith, a very high order of accuracy could be secured. It occurred to the author that it would be interesting to try the experiment of a zenith telescope on somewhat similar lines to the Cookson, but with the substitution of a system of suspension for that of flotation. By this device it seemed that all possibility of temperature disturbance in the instrument could be eliminated, as no temperature variation in the suspension system would affect the verticality of the collimation axis. It could also be made an instrument of complete mechanical symmetry, capable of being enclosed in an outer case, and either maintained at constant temperature or, if that were not found expedient, being so insulated that any temperature change would be very slow. In general it appeared that instrumental errors could be reduced to negligibly small magnitudes. A preliminary design was accordingly made and the curators of the Durham University Observatory

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